MOTOROLA
test equipment

UNIVERSAL TONE GENERATOR

TEK-34A, TEK-34B AND TEK-34C

68P81110A11-D

UNIVERSAL TONE GENERATOR

(67-1161.4 Hz REED SELECTABLE)

MODEL TABLE

Model	Type of Universal Tone Generator
TEK-34A	With Two Tone Oscillators
TEK-34B	With Three Tone Oscillators
TEK-34C	With Four Tone Oscillators

PERFORMANCE SPECIFICATIONS

Frequency Range	67.0 to 1161.4 Hz; includes all frequencies available in TU217 Series "Vibrasender" Resonant Reed
Frequency Accuracy	±0.25%
Output Voltage	Into 10k ohm load (Model S-1318A FM Signal Generator), approximately 5 V rms. Into 600 ohm load, approximately 5 V rms.
Power Supply	117 V ac, 50-60 Hz
Weight	Shipping weight 10 lbs.
Dimensions	8" high x 10-1/4" wide x 7" deep

1. DESCRIPTION

The Universal Tone Generator provides a tone source for any application in which high frequency stability is required. It employs transistorized circuitry and achieves high audio frequency stability through "Vibrasender" resonant reeds. Its frequency range extends from 67.0 to 1161.4 Hz with an accuracy of ±0.25%. Feeding into a 10,000 ohm load, the tone generator will develop a maximum signal of approximately 5 V rms, sufficient to obtain 5 kHz deviation in a signal generator.

The Universal Tone Generator contains an output amplifier which permits testing and servicing tone-actuated equipment, such as the Motorola "Quik-Call" Decoder, directly from the tone generator.

2. APPLICATION

The Universal Tone Generator is available in three models. The Model TEK-34A contains two identical oscillator circuits, each controlled by a "Vibrasender" resonant reed. It is suitable for testing and servicing paging receiver circuits which employ "Private-Line" selective tone-coded circuitry. The Model TEK-34B contains three oscillator circuits and may be used for testing and servicing "Bellboy" paging units, in addition to the preceding equipment. The Model TEK-34C contains four oscillator circuits and is suitable for testing and servicing "Quik-Call" equipment, in addition to all of the preceding equipment. Add-on kits are available for adding oscillators to the basic Model TEK-34A.

3. DESCRIPTION OF USER ITEMS

Front panel jacks are provided for four TU217 Series "Vibrasender" resonant reeds. Storage slots are provided on the rear of the unit for eight additional reeds.

Front panel controls consist of an OFF-LEVEL control, a HIGH-LOW FREQUENCY selector switch and four lever type-tone switches. The OFF-LEVEL control is a ganged potentiometer and power switch. The power switch turns the unit ON and OFF, and the potentiometer sets the output tone level. A red pilot lamp is provided to indicate power ON. The HIGH-LOW FREQUENCY selector switch provides optimum operating conditions for tone frequencies above or below 140 Hz. Motorola equipment which uses multiple simultaneous tones is constructed to utilize simultaneous tones either above or below 140 Hz, but not both. The four lever type tone switches are provided to select the outputs of oscillators 1, 2, 3 and 4 either singly or in combinations. The lever switches are spring-loaded in their down positions and will return to center OFF when released. Down position is used for momentary tone generation. The switches remain

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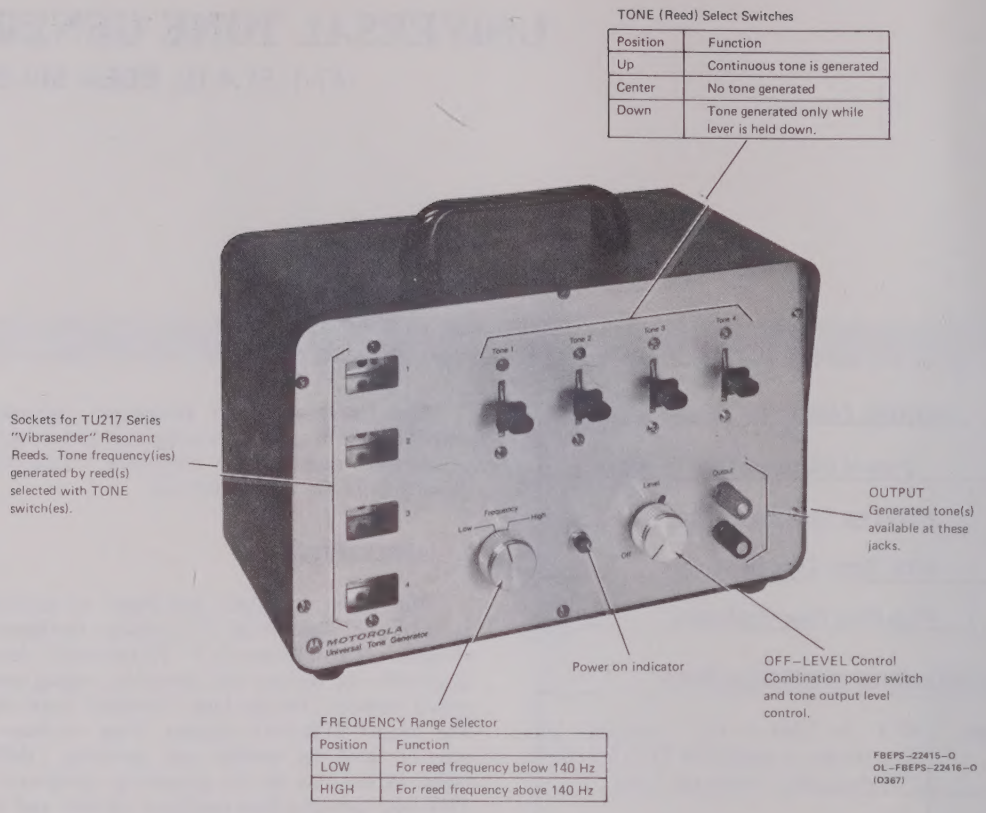

TONE (Reed) Select Switches
Position | Function
Up | Continuous tone is generated
Center | No tone generated
Down | Tone generated only while lever is held down.
Sockets for TU217 Series "Vibrasender" Resonant Reeds. Tone frequency(ies) generated by reed(s) selected with TONE switch(es).
OUTPUT Generated tone(s) available at these jacks.
Power on indicator
OFF—LEVEL Control Combination power switch and tone output level control.
FREQUENCY Range Selector
Position | Function
LOW | For reed frequency below 140 Hz
HIGH | For reed frequency above 140 Hz
FBEPS-22415-O
OL-FBEPS-22416-O
(D367)

Figure 1. TEK-34C Universal Tone Generator Front Panel Items

locked when placed in the up position to provide a continuous tone signal and must be returned to center OFF manually.

4. OPERATING INSTRUCTIONS

4.1 HOW TO SET UP EQUIPMENT

An FM signal generator is required to provide the carrier frequency for testing equipment operated with a radio receiver. Motorola "Quik-Call" decoders may be tested and serviced directly from the tone generator, or with a receiver and a signal generator. Connect the universal tone generator to the external modulation jacks of the FM signal generator, a typical test equipment setup is shown in Figure 2. Adjust the universal tone generator output level for the deviation as recommended in the following procedures for the particular equipment to be tested.

Step 1. Plug a "Vibrasender" resonant reed of the proper tone frequency for the equipment to be tested into tone oscillator socket #1 on the universal tone generator.

Step 2. Place the HIGH-LOW FREQUENCY selector switch in the HIGH position if the tone frequency is above 140 Hz, or LOW position if below 140 Hz.

Step 3. Turn on the universal tone generator, and allow five seconds for the oscillator output amplitude to stabilize before using.

Step 4. Place the TONE 1 switch in the upper position.

Step 5. Place the FM signal generator modulation switch in the external position.

Step 6. Place the FM signal generator deviation band switch in the proper position. If the Motorola T1034C Signal Generator is used, the band switch letter must match that indicated on the tuning dial.

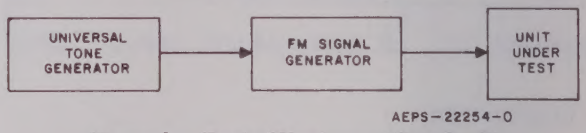


Figure 2. Typical Equipment Test Set Up

Step 7. Set the FM signal generator deviation control to maximum (fully clockwise).

Step 8. Adjust the FM signal generator output level for a 1000 uV signal, as indicated on the dial.

4.2 RECEIVERS USING "PRIVATE-LINE" TONE-CODED SQUELCH CONTROL

4.2.1 Testing For Proper Squelch Circuit Operation

Step 1. Set up the equipment as described in paragraph 4.1, above.

Step 2. Adjust the universal tone generator LEVEL control for 1 kHz deviation, as indicated on the FM signal generator meter.

Step 3. With the FM signal generator set to the receiver carrier frequency, the "Private-Line" tone-coded squelch circuit should open.

4.2.2 Measuring Squelch Sensitivity

Step 1. Check for proper squelch circuit operation as described in paragraph 4.2.1, above.

Step 2. Make sure the FM signal generator is exactly on frequency for the receiver under test. If Motorola Model S1056B-59B Test Set is used with this test, adjust the FM signal generator tuning dial for an exact zero indication on meter position 4 of the test set.

Step 3. Reduce the FM signal generator output level until the squelch circuit closes.

Step 4. The squelch sensitivity obtained should be less than the receiver 20 dB quieting sensitivity. (See receiver instruction manual for sensitivity specifications.)

4.2.3 Servicing "Private-Line" Tone-Coded Circuitry

Step 1. Set up the equipment as described in paragraph 4.1, above.

Step 2. Adjust the signal generator output level for 1000 uV. Adjust the universal tone generator output LEVEL to provide 1 kHz deviation.

Step 3. Make necessary measurements in the "Private-Line" tone-coded squelch circuitry and compare with those on the respective receiver schematic diagram.

4.3 SINGLE REED, LOW FREQUENCY PAGING RECEIVERS

4.3.1 Testing For Proper Operation

Step 1. Set up the equipment as previously described in paragraph 4.1, above. Adjust the universal tone generator LEVEL control for 2.5 kHz deviation.

Step 2. Adjust the FM signal generator output as recommended in the paging receiver instruction manual.

Step 3. Depress the TONE 1 lever switch on the universal tone generator. After three seconds, the alert tone should be heard from the low frequency paging receiver.

4.3.2 Servicing Decoding Circuitry

Step 1. Check for proper decoding operation as described in paragraph 4.3.1, above.

Step 2. Place the TONE 1 lever switch in the upper position for continuous output.

Step 3. Using a Motorola Transistorized AC Voltmeter (or equivalent), measure signal amplitude within the low frequency paging receiver following standard signal tracing procedures.

4.4 SEQUENTIAL TWO-TONE VHF AND LOW FREQUENCY PAGING RECEIVERS

4.4.1 Testing For Proper Operation

Step 1. Set up the equipment as described in paragraph 4.1, above. Insert a second "Vibrasender" resonant reed on the frequency of the second sequential tone into tone oscillator socket #2 on the universal tone generator.

Step 2. Adjust the universal tone generator output LEVEL control for 2.5 kHz deviation, if a two-tone low frequency paging receiver is being tested, or for 3.3 kHz deviation if testing a VHF paging receiver. Use one tone only when adjusting the LEVEL control for the desired FM signal generator deviation.

Step 3. With one finger, depress TONE 1 switch for about one second. Release the TONE 1 switch and immediately depress the TONE 2 switch using the same finger. (This simulates the correct time delay between the two tones.) The alert tone should be heard from the paging receiver and will continue for as long as the TONE 2 switch is held depressed.

NOTE

This test should be made at the minimum amplitude rf signal which will operate the paging receiver, as specified in the performance specifications for the receiver.

Step 4. Repeat Step 3 but in reverse order, depressing TONE 2 switch first and then TONE 1 switch. The paging receiver should *not* respond and an alerting tone should not be heard.

4.4.2 Servicing Decoding Circuitry

Step 1. Check for proper operation as described in paragraph 4.4.1, above. Adjust the FM signal generator for a full quieting signal.

Step 2. Place TONE 1 switch in the upper position for a continuous signal.

Step 3. Using a Motorola Transistorized AC Voltmeter and a Motorola Transistorized DC Multimeter (or equivalents), make circuit measurements in the tone #1 circuitry following standard signal tracing procedures.

Step 4. If the TONE 1 circuitry is operating properly, leave TONE 1 switch in the upper position, and place TONE 2 switch in the upper position. Make circuit measurements in TONE 2 circuitry.

4.5 "BELLBOY" PAGING RECEIVERS (THREE SIMULTANEOUS TONES)

4.5.1 Testing For Proper Operation

Step 1. Plug the necessary "Vibrasender" resonant reeds in sockets 1, 2 and 3 of the Universal Tone Generator. Set up the equipment as described in paragraph 4.1, above.

Step 2. Adjust the universal tone generator output LEVEL control for 1.3 kHz deviation.

Step 3. Reduce the FM signal generator output to provide the minimum rf signal that will operate the "Bellboy" Paging Receiver, as specified in the performance specifications for the receiver.

Step 4. Depress the TONE 1, TONE 2 and TONE 3 switches simultaneously for approximately one second and release. The alert tone should be heard from the paging receiver for 3 to 30 seconds, depending upon adjustment of the receiver, and should then automatically stop.

4.5.2 Servicing Decoding Circuitry

Step 1. Check for proper operation as described in paragraph 4.5.1, above.

Step 2. Place the TONE 1, TONE 2 and TONE 3 switches in the up position.

Step 3. With a Motorola Transistorized AC Voltmeter and a Motorola Transistorized DC Multimeter (or equivalents), make circuit measurements. These voltages should be compared with the values given in the paging receiver instruction manual.

4.6 "QUIK-CALL" DECODER WITH RECEIVER

4.6.1 Testing For Proper Operation

Step 1. Set up the equipment as described in paragraph 4.1, above. Insert the two "Vibrasender" resonant reeds for the first tone-code into sockets 1 and 2, and the two reeds for the second tone-code into sockets 3 and 4.

Step 2. Depress TONE 1 switch and adjust the universal tone generator output LEVEL control for 2 kHz deviation of the FM signal generator.

Step 3. Adjust the FM signal generator output for full receiver quieting.

Step 4. Depress TONE 1 and TONE 2 switches for approximately one second and release. Depress TONE 3 and TONE 4 switches for approximately 1-1/2 seconds at which time the "Quik-Call" decoder relay should energize.

Step 5. Wait five seconds and then repeat; depressing TONE 3 and TONE 4 switches *first*, and TONE 1 and TONE 2 switches *second*. The "QUIK-CALL" decoder should *not* respond.

4.6.2 Servicing Decoder Circuitry

Step 1. Check for proper operation as described in paragraph 4.6.1, above.

Step 2. Place TONE 1 and TONE 2 switches in the upper position. Using a Motorola Transistorized AC Voltmeter and a Motorola Transistorized DC Multimeter (or equivalents), make circuit measurements in the first two "Vibrasponder" resonant reeds and associated circuitry. Compare these readings against those in the instruction manual.

Step 3. Leave TONE 1 and TONE 2 switches in the upper position. Place TONE 3 and TONE 4 switches in the upper position. Measure voltages in the remaining "QUIK-CALL" decoder circuitry.

4.7 "QUIK-CALL" DECODER WITHOUT RECEIVER

4.7.1 Testing For Proper Operation

Step 1. Connect a TEKA-61 Test Cable to the universal tone generator and to the Model S-1347A or S-1348A Power Supply. Refer to Figure 3 and proceed as follows:

a. Make sure all power is off.

b. Connect the BLUE test cable lead to the RED OUTPUT terminal of the Universal Tone Generator and its shield to the BLACK terminal.

c. Connect the RED test cable lead to the positive terminal of the power supply and its shield to the negative terminal. Make sure that the shield is connected properly.

d. Plug the test cable into the "QUIK-CALL" decoder.

Step 2. Connect a Motorola Transistorized AC Voltmeter (or equivalent) across the tone generator output terminals. Turn on the tone generator. Insert the two "Vibrasender" resonant reeds for the first tone-code into sockets 1 and 2, and the two reeds for the second tone-code into sockets 3 and 4. Adjust the universal tone generator output LEVEL control for 1.3 V ac.

Step 3. Turn on the power supply and adjust its output for 13 V dc.

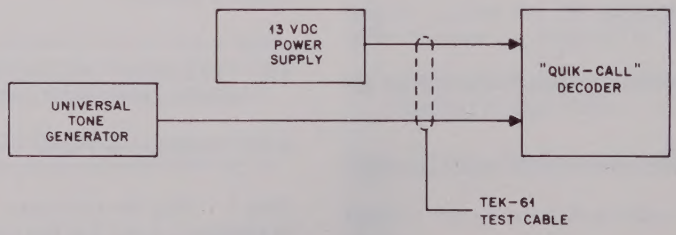


Figure 3. Test Set Up for "QUIK-CALL" Decoder Without Receiver

Step 4. Depress TONE 1 and TONE 2 switches simultaneously for one second and release. Immediately depress TONE 3 and TONE 4 switches for about 1-1/2 seconds. The relay in the "QUIK-CALL" Decoder should energize.

4.7.2 Servicing Decoder Circuitry

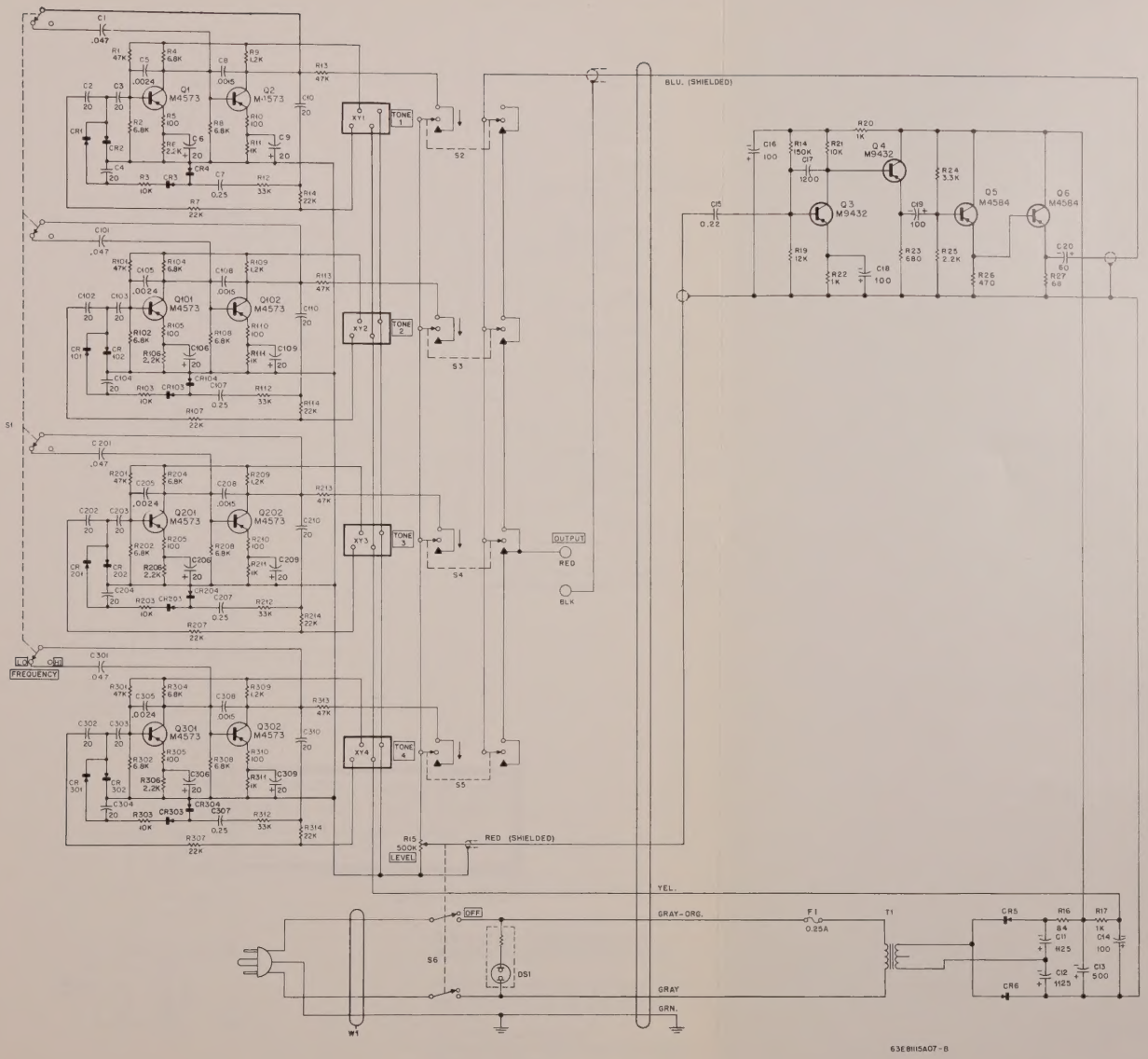
Step 1. Check for proper operation as described in paragraph 4.6.1, above.

Step 2. Place TONE 1 and TONE 2 switches in the upper position. Using a Motorola Transistorized AC Voltmeter and a Motorola Transistorized DC Multimeter (or equivalents), make circuit measurements in the first two "Vibrasponder" resonant reeds and associated circuitry. Compare these readings against those in the instruction manual.

Step 3. Leave TONE 1 and TONE 2 switches in the upper position. Place TONE 3 and TONE 4 switches in the upper position. Measure voltages in the remaining "QUIK-CALL" decoder circuitry.

5. FUNCTIONAL DESCRIPTION

Each Oscillator circuit consists basically of a two-stage audio amplifier with its output connected back to the input providing positive feedback. Refer to the attached schematic diagrams for circuit details. The frequency-controlling "Vibrasender" resonant reed is connected between ground and the input-output junction. The reed acts as a highly selective tuned circuit. It has a high impedance at its resonance frequency and a lower impedance at off-resonance frequencies. The reed determines the frequency of oscillation. An automatic gain control circuit prevents over-driving the circuit, thereby reducing distortion. This agc circuit also maintains a nearly constant output level throughout the range of "Vibrasender" reed frequencies, temperature changes and load impedance.



NOTES:

1. ARROWS ON S2,S3,S4 & S5 INDICATE MOMENTARY POSITION.
2. TONES 3 & 4 NOT USED IN TEK-34A.
3. TONE 4 NOT USED IN TEK-34B.
4. R15 AND S6 ARE GANGED.
5. ALL CAPACITOR VALUES ARE IN UF.

MODEL	SUFFIX	DESCRIPTION
TEK-34A	2	2 TONE OSCILLATORS
TEK-34B	2	3 TONE OSCILLATORS
TEK-34C	2	4 TONE OSCILLATORS

FOR EARLIER MODELS, REFER TO SCHEMATIC DIAGRAM 63D811110A12.

PREVIOUS REVISIONS AND PARTS LIST SHOWN ON BACK OF THIS SHEET

Universal Tone Generator
(Later Models, With Number Suffix)
Schematic Diagram
Motorola No. PEPS-22256-O
11/16/76-UP

REVISIONS PEPS-2225b-O

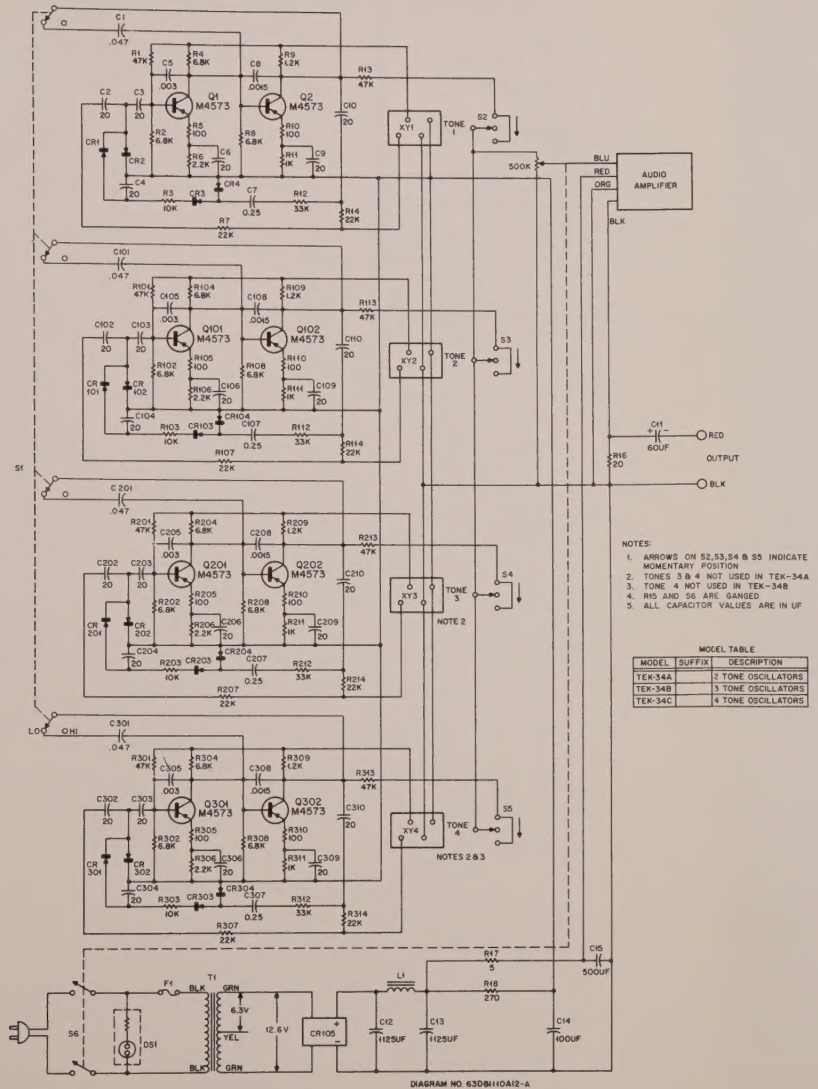
CHASSIS AND SUFFIX NO.	REF. SYMBOL	CHANGE	LOCATION
TEK-34A	C20	WAS 23D82601A24	PARTS LIST
TEK-34A-2 TEK-34B-2 TEK-34C-2	C5, 105 205, 305	WERE 21C82187B16, .003 uF	Q1, 101, 201 201 COLLECTORS
TEK-34A-2 TEK-34B-2 TEK-34C-2		KNOBS CHANGED	PARTS LIST

PARTS LIST

TEK-34A Universal Tone Generator (Two Tones)
TEK-34B Universal Tone Generator (Three Tones)
TEK-34C Universal Tone Generator (Four Tones) PL-5068-O

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
		CAPACITOR, fixed: uF ±10%; 100 V; unless otherwise stated
C1, 101, 201, 301	8K865640	.033
C2, 3, 4, 6, 9, 10, 102, 103, 104, 106, 109, 110, 202, 203, 204, 206, 209, 210, 302, 303, 304, 306, 309, 310	23D82601A03	20 +100-0%; 25 V
C5, 105, 205, 305	21D83596E05	.0024
C7, 107, 207, 307	8K868596	0.25
C8, 108, 208, 308	21K859946	500 uuF; 500 V
C11, 12	23C82394A02	1125 +250-10%; 20 V
C13	23C82394A06	500 +150-10%; 25 V
C14	23D82601A09	100 +150-10%; 25 V
C15	8D83293B02	0.22
C16	23C82077C01	100; 35 V
C17	21D82187B04	.0012; 500 V
C18, 19	23D82601A12	100 +150-10%; 6 V
C20	23D82601A29	60 +150-10%; 50 V
		SEMICONDUCTOR DEVICE, diode: (SEE NOTE)
CR1, 2, 101, 102, 201, 202, 301, 302	48C82392B01	silicon
CR3, 4, 103, 104, 203, 204, 303, 304	48C82392B03	silicon
CR5, 6	48C82466H03	silicon
		LAMP, glow: indicator
DS1	65C82840C01	neon
		FUSE, cartridge:
F1	65K802942	1/4 amp; 250 V
		TRANSISTOR: (SEE NOTE)
Q1, 2, 101, 102, 201, 202, 301, 302	48R134573	PNP; type M4573
Q3, 4	48R869432	PNP; type M9432
Q5, 6	48R134584	PNP; type M4584
		RESISTOR, fixed: ±5%; 1/4 W; unless otherwise stated
R1, 13, 101, 113, 201, 213, 301, 302	6S131527	47k
R2, 4, 8, 102, 104, 108, 202, 204, 208, 302, 304, 308	6S129237	6.8k
R3, 103, 203, 303	6S129668	10k
R5, 10, 105, 110, 205, 210, 305, 310	6S131524	100
R6, 106, 206, 306	6S129804	2.2k
R7, 14, 107, 114, 207, 214, 307, 314	6S129667	22k
R9, 109, 209, 309	6S129708	1.2k
R11, 111, 211, 311	6S129805	1k
R12, 112, 212, 312	6S129526	33k
R15	18C82810C02	var: 500k ±30%; incl. S6
R16	17C82291B12	84; 5 W
R17	6S6327	1k ±10%; 1 W
R18	6S129146	150k ±10%
R19	6S129230	12k ±10%
R20, 22	6S127802	1k ±10%
R21	6S129225	10k ±10%
R23	6S128599	680 ±10%
R24	6S129231	3.3k ±10%
R25	6S128689	2.2k ±10%
R26	6S6090	470 ±10%; 1/2 W
R27	6S118239	68 ±10%; 2 W
		SWITCH:
S1	40C04936C05	rotary; 4 pdt
S2, 3, 4, 5	40C82480E01	lever, 2 pole, 3 pos.
S6		dpst; p/o R15
		TRANSFORMER:
T1	25C82103F01	pri: BLK, BLK sec: GRN, GRN: with YEL center tap
		CABLE:
W1	30B865903	3 cond.; incl. PLUG
		FUSEHOLDER:
XF1	31A824974	single fuse
		SOCKET, "Vibrasender" Reed
XY1, 2, 3, 4	9C82050A01	female; 4 cont.
NON-REFERENCED ITEMS		
	36C82631H03	KNOB, black; 2 used (earlier models)
	36A82246F01	KNOB, lever switch
	36-84675F03	KNOB, metal; 2 used (later models)
	3-9700	SCREW, set; 6-32 x 3/16; 2 used
	15-82097F01	HOUSING
	15-82098F01	RACK, reed storage

NOTE: Replacement diodes and transistors must be ordered by Motorola part number only for optimum performance.



NOTES:

1. ARROWS ON S2,S3,S4 & S5 INDICATE MOMENTARY POSITION
2. TONES 3 & 4 NOT USED IN TEK-34A
3. TONE 4 NOT USED IN TEK-34B
4. R15 AND S6 ARE GANGED
5. ALL CAPACITOR VALUES ARE IN UF

MODEL TABLE

MODEL	SUFFIX	DESCRIPTION
TEK-34A		2 TONE OSCILLATORS
TEK-34B		3 TONE OSCILLATORS
TEK-34C		4 TONE OSCILLATORS

FOR MODELS TEK-34A, TEK-34B AND TEK-34C WITH SUFFIX - 1 OR LATER, REFER TO SCHEMATIC DIAGRAM 63E81115A07.

EPD-18972-O

FOR LATER MODELS, REFER TO SCHEMATIC DIAGRAM PEPS-22256.

PREVIOUS REVISIONS AND PARTS LIST SHOWN ON BACK OF THIS SHEET

Universal Tone Generator
(Earlier Models, Without Number Suffix)
Schematic Diagram
Motorola No. 63D81110A12-A
11/16/76-UP

REVISIONS

DIAG. ISSUE	CHASSIS AND SUFFIX NO.	REF. SYMBOL	CHANGE	LOCATION
A	TEK-34A-1 TEK-34B-1 TEK-34C-1		EXTENSIVE CIRCUIT AND COMPONENT CHANGES.	REFER TO SCHEMATIC DIAGRAM 63E81115A07-O

PARTS LIST for Schematic Diagram 63E81110A12-A

TEK34A Universal Tone Generator
TEK34B Universal Tone Generator
TEK34C Universal Tone Generator

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
		CAPACITOR, fixed: uf ±10%; 100 v; unl stated
C1, 101, 201, 301	8K852471	.047
C2, 3, 4, 6, 9, 10, 102, 103, 104, 106, 109, 110, 202, 203, 204, 206, 209, 210, 302, 303, 304, 306, 309, 310	23D82601A03	20 +100-0%; 25 v
C5, 105, 205, 305	21K82187B16	.003
C7, 107, 207, 307	8K868596	0.25
C8, 108, 208, 308	21K82187B11	.0015; 500 v
C11	23D82601A06	60 +150-10%; 50 v
C12, 13	23C82394A02	1125 +250-10%; 20 v
C14	23D82601A09	100 +150-10%; 25 v
		SEMICONDUCTOR DEVICE, diode; (SEE NOTE)
CR1, 2, 101, 102, 201, 202, 301, 302	48C82392B01	silicon
CR3, 4, 103, 104, 203, 204, 303, 304	48C82392B03	silicon
CR105	48P866904	silicon
		LAMP, glow: indicator
DS1	65A82787E01	neon
		FUSE, cartridge:
F1	65K20987	1/4 amp; 250 v
		COIL, AF:
L1	25C82491E01	choke; 0.2 h
		TRANSISTOR: (SEE NOTE)
Q1, 2, 101, 102, 201, 202, 301, 302	48R134573	P-N-P; type M4573
		RESISTOR, fixed: ±5%; 1/2 w unl stated
R1, 13, 101, 113, 201, 213, 301, 302	6R5772	47K
R2, 4, 8, 102, 104, 108, 202, 204, 208, 302, 304, 308	6R2001	6.8K
R3, 103, 203, 303	6R5556	10K
R5, 10, 105, 110, 205, 210, 305, 310	6R6408	100
R6, 106, 206, 306	6R2028	2.2K
R7, 14, 107, 114, 207, 214, 307, 314	6R6480	22K
R9, 109, 209, 309	6R6166	1.2K
R11, 111, 211, 311	6R6411	1K
R12, 112, 212, 312	6R2068	33K
R15	18C82810C02	var: 500K ±30%; incl S6
R16	17C82177B07	20; 5 w
R17	17C82177B04	5 ±10%; 5 w
R18	6R6336	270 ±10%; 1 w
		SWITCH:
S1	40K893209	rotary; 4pdt
S2, 3, 4, 5	40C82480E01	lever, 2 pole, 3 pos.
S6		dpst; p/o R15
T1	25P866902	TRANSFORMER: pri: BLK, BLK sec: GRN, GRN; with YEL center tap
W1	30B824772	CABLE: 2 cond.; incl PLUG
XF1	31A824974	FUSEHOLDER: single fuse
XY1, 2, 3, 4	9C82050A01	SOCKET, "Vibrasender" Reed: female; 4 cont.
		NON-REFERENCED ITEMS
	36K855070 36P866927	KNOB KNOB, lever switch

NOTE:

Diodes and transistors must be ordered by Motorola part number only for optimum performance.

UNIVERSAL TONE GENERATOR

68P81110A11-D

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